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| 09/895,768 | 06/29/2001 | Michael H. Chu | 2207/11234 | 6925 |

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| EXAMINER |
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WANG, JIN CHENG

| ART UNIT | PAPER NUMBER |
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2672

DATE MAILED: 08/12/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,768

Applicant(s)

CHU ET AL.

Examiner

Jin-Cheng Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 6, line 16-17, "that that" should be "that". Appropriate correction is required.

Claim Rejections - 35 USC § 112 – First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For example, the claim 18 sets forth the claim limitation of "said rendering step is performed with 'Renderman' software". However, nowhere in the specification ever mention Renderman software, let alone the rendering step being performed with Renderman software.

Claim Rejections - 35 USC § 112 – Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, Claim 1 or 2 recites "resizing each full frame to produce a plurality

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of frames that are antialiased." It is not clear from the claim language whether the resizing of each frame is spatially or temporally performed or determined on the pixels of each frame among a sequence of frames. The claim language is indefinite because it could mean that a plurality of full frames are resized to produce a plurality of frames that are antialiased. It could also mean that a single full frame is resized to produce a plurality of antialiasing frames or to produce just one of a plurality of antialiasing frames. Claims 3-8 and 15-18 depend upon the claim 1 and are rejected for the same reason set forth in the claim 1. Claims 9-14 depend upon the claim 2 and are rejected for the same reason set forth in the claim 2.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-7, 15-18, and 19-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Adobe Dynamic Media Group, "A Digital Video Primer", pp. 1-31; June 2000 (hereinafter Adobe-Dynamics-Media-Group).

Claim 1:

Adobe-Dynamics-Media-Group teaches rendering of full frames at a whole number of multiple of a digital video resolution value defining the number of pixels contained in each frame and at a whole number multiple of a temporal resolution value defining the rate of display of full

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frames on a computer screen (*e.g., Adobe-Dynamics-Media-Group teaches in page 4 producing videos in different resolutions and at the frame rates. The original video frames can be rendered at different resolution and different temporal resolution rates. Therefore, Adobe-Dynamics-Media-Group teaches full frames are rendered at a multiple of the original video resolution and at a multiple of a temporal resolution rate*);

Resizing a full frame to produce one of a plurality of frames that are antialiased (*e.g., Adobe-Dynamics-Media-Group teaches compression which reduces the size of each input video frame, in page 7 and 11, while keeping image quality high and avoiding compression artifacts*);

Blending each consecutive frame (*e.g., Adobe-Dynamics-Media-Group teaches in page 12 that pixels corresponding to the frames can be spatially or temporally blended*).

Claim 4:

The claim 4 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of separating each frame into a first and second field, the first field contains the even lines of a frame and the second field contains the odd lines of a frame. However, Adobe-Dynamics-Media-Group further discloses the claim limitation of separating each frame into a first and second field, the first field contains the even lines of a frame and the second field contains the odd lines of a frame (*e.g., Adobe-Dynamics-Media-Group further discloses software for calculating the images for the two set of fields, for each frame of video, in order to achieve the smoothest motion and thereby separating the even and odd lines of the picture image by calculating the images for the two set of fields separately for the first 1/60th of a*

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second and the next 1/60th of a second in the TV screen. Therefore, a television that is displaying 30 frames per second is really displaying 60 fields per second).

Claim 5:

The claim 5 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of alternately displaying the first and second fields of each frame, the first field of each frame with the second field of each frame. However, Adobe-Dynamics-Media-Group further discloses the claim limitation of alternately displaying the first and second fields of each frame, the first field of each frame with the second field of each frame (*e.g., Adobe-Dynamics-Media-Group page 4 calculating the odd and even fields of a picture image and alternately display the two set of fields for the first 1/60th of a second and the next 1/60th of a second in the TV screen).*

Claim 6:

The claim 6 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of resizing each full frame to produce antialiased frames is performed with bicubic interpolation.

However, Adobe-Dynamics-Media-Group further discloses the claim limitation of resizing each full frame to produce antialiased frames is performed with bicubic interpolation (*e.g., Applicant admits on page 4 of applicant's specification that Adobe's AfterEffects teaches bicubic interpolation of pixels for each full frame and Adobe-Dynamics-Media-Group teaches a set of the software such as Adobe AfterEffects, Photoshop and Premier).*

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Claim 7:

The claim 7 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of each pair of consecutive frames being blending by averaging corresponding pixel values of each frame.

However, Adobe-Dynamics-Media-Group further discloses the claim limitation of each pair of consecutive frames being blending by averaging corresponding pixel values of each frame (*e.g., Adobe-Dynamics-Media-Group further discloses in page 12 each of the I, B and P frames are obtained from a pair of consecutive frames by averaging the corresponding pixel values of each frame*).

Claim 15:

The claim 15 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the rendering step being implemented using Photoshop software.

However, Adobe-Dynamics-Media-Group further discloses the Photoshop software implementing the rendering step (*e.g., Adobe-Dynamics-Media-Group in page 16 discloses the Photoshop software that can be used to perform the rendering step*).

Claim 16:

The claim 16 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of separating step being implemented using AfterEffects software. However, Adobe-Dynamics-Media-Group further discloses the claim limitation of separating step being implemented using AfterEffects software (*e.g., Adobe-Dynamics-Media-Group in*

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page 4 discloses the separating of two set of fields of a picture image using AfterEffects software).

Claim 17:

The claim 17 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of animation consisting of film displayed at the rate of at least 24 frames per second. However, Adobe-Dynamics-Media-Group further discloses the claim limitation of animation consisting of film displayed at the rate of at least 24 frames per second (*e.g., Adobe-Dynamics-Media-Group in page 3 that film displayed at the rate of 24 frames per second*).

Claim 18:

The claim 18 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the rendering step being implemented using Renderman software. However, Adobe-Dynamics-Media-Group further discloses the Photoshop software implementing the rendering step (*e.g., Since applicant's specification has NOT disclosed the Renderman software for performing the rendering step, the claim limitation renders the claim 18 indefinite. However, Adobe-Dynamics-Media-Group in page 16 discloses the Photoshop software that can be used to perform the rendering step*).

Claim 19:

The claim 19 encompasses the same scope of invention as that of the claim 1. The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

Claim 20:

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The claim 20 encompasses the same scope of invention as that of the claim 1. The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

Claim 21:

The claim 21 encompasses the same scope of invention as that of the claim 7. The claim 19 is subject to the same rationale of rejection set forth in the claim 7.

Claim 22:

The claim 22 encompasses the same scope of invention as that of the claim 4. The claim 19 is subject to the same rationale of rejection set forth in the claim 4.

Claim 23:

The claim 23 encompasses the same scope of invention as that of the claim 5. The claim 19 is subject to the same rationale of rejection set forth in the claim 5.

Claim 24:

The claim 24 encompasses the same scope of invention as that of the claim 5. The claim 19 is subject to the same rationale of rejection set forth in the claim 5.

Claim 25:

The claim 22 encompasses the same scope of invention as that of the claim 6. The claim 19 is subject to the same rationale of rejection set forth in the claim 6.

Claim 26:

The claim 22 encompasses the same scope of invention as that of the claim 7. The claim 19 is subject to the same rationale of rejection set forth in the claim 7.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 8-14, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adobe Dynamic Media Group, "A Digital Video Primer", pp. 1-31; June 2000 as applied to claim 1 above, and further in view of Demos U.S. Patent No. 6,442,203 (hereinafter Demos).

Claim 2:

(a) Adobe-Dynamics-Media-Group teaches rendering of full frames at a whole number of multiple of a digital video resolution value defining the number of pixels contained in each frame and at a whole number multiple of a temporal resolution value defining the rate of display of full frames on a computer screen (*e.g., Adobe-Dynamics-Media-Group teaches in page 4 producing videos in different resolutions and at the frame rates. The original video frames can be rendered at different resolutions and different temporal resolution rates. Therefore, Adobe-Dynamics-Media-Group teaches full frames are rendered at a multiple of the original video resolution and at a multiple of a temporal resolution rate*).

Resizing a full frame to produce one of a plurality of frames that are antialiased (*e.g., Adobe-Dynamics-Media-Group teaches compression which reduces the size of each video frame, in page 7 and 11, while keeping image quality high and avoiding compression artifacts*);

Blending each consecutive frame (*e.g., Adobe-Dynamics-Media-Group teaches in page 12 that pixels corresponding to the frames can be spatially or temporally blended*).

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Separating each frame into a first and second field, wherein the first field contains the even lines of a frame and the second field contains the odd lines of a frame (e.g., *Adobe-Dynamics-Media-Group further discloses software for calculating the images for the two set of fields, for each frame of video, in order to achieve the smoothest motion and thereby separating the even and odd lines of the picture image by calculating the images for the two set of fields separately for the first $1/60^{\text{th}}$ of the second and the next $1/60^{\text{th}}$ of a second in the TV screen. Therefore, a television that is displaying 30 frames per second is really displaying 60 fields per second*);

Alternately displaying the first and second fields of each frame, the first field of each frame with the second field of each frame (e.g., *Adobe-Dynamics-Media-Group page 4 calculating the odd and even fields of a picture image and alternately display the two set of fields for the first $1/60^{\text{th}}$ of a second and the next $1/60^{\text{th}}$ of a second in the TV screen*).

(b) However, Adobe-Dynamics-Media-Group is silent to Gaussian blurring and thereby is silent to the claim limitation of "Blending the colors and images depicted in pixels that are within a Gaussian blur radius value of a center pixel, wherein the number of pixels blended is proportional to a Gaussian blur radius".

(c) Demos teaches Gaussian blur radius and the claim limitation of "Blending the colors and images depicted in pixels that are within a Gaussian blur radius value of a center pixel, wherein the number of pixels blended is proportional to a Gaussian blur radius" (e.g., *Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus*

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and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the Gaussina blur radius of Demos into Adobe-Dynamics-Media-Group's software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-Group page 21 and 25). Therefore Adobe-Dynamics-Media-Group suggests the claim limitation. Moreover, Demos also teaches spatially and temporally compositing of video frames (Demos column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames (Demos column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group page 21 and 25).

Claim 3:

The claim 3 encompasses the same scope of invention as that of the claim 2. The claim 2 is subject to the same rationale of rejection set forth in the claim 2.

Claim 8:

(a) The claim 8 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of gaussian blurring of a non-zero pixel radius being performed that

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blends the colors and images depicted in pixels that are within a gaussian blur radius value of a center pixel.

(b) The Adobe-Dynamics-Media-Group discloses all claim limitations set forth in the claim 1. However, Adobe-Dynamics-Media-Group is silent to Gaussian blur radius and thereby is silent to the claim limitation of gaussian blurring of a non-zero pixel radius being performed that blends the colors and images depicted in pixels that are within a gaussian blur radius value of a center pixel.

(c) Demos teaches Gaussian blur radius and the claim limitation of gaussian blurring of a non-zero pixel radius being performed that blends the colors and images depicted in pixels that are within a gaussian blur radius value of a center pixel (*e.g., Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter*).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the Gaussian blur radius of Demos into Adobe-Dynamics-Media-Group's software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-Group page 21 and 25).

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Therefore Adobe-Dynamics-Media-Group suggests the claim limitation. Moreover, Demos also teaches spatially and temporally compositing of video frames (Demos column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames (Demos column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group page 21 and 25).

Claim 9:

The claim 9 encompasses the same scope of invention as that of the claim 2 except additional claim limitation that is identical to the claim 6. The claim 9 is subject to the same rationale of rejection set forth in the claim 6.

Claim 10:

The claim 10 encompasses the same scope of invention as that of the claim 2 except additional claim limitation that is identical to the claim 7. The claim 10 is subject to the same rationale of rejection set forth in the claim 7.

Claims 11-14:

Each of the claims 11-14 encompasses the same scope of invention as that of the claim 2. The claims 11-14 are subject to the same rationale of rejection set forth in the claim 2 (*e.g., Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter*).

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Claim 27:

(a) The claim 27 encompasses the same scope of invention as that of the claim 26 except additional claim limitation of gaussian blurring being performed that blends the colors and images depicted in pixels that are in proximity to one another in each frame.

(b) The Adobe-Dynamics-Media-Group discloses all claim limitations set forth in the claim 1. However, Adobe-Dynamics-Media-Group is silent to gaussian blurring being performed that blends the colors and images depicted in pixels that are in proximity to one another in each frame.

(c) Demos teaches Gaussian blur and the claim limitation of gaussian blurring being performed that blends the colors and images depicted in pixels that are in proximity to one another in each frame (*e.g., Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter*).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the Gaussian blurring of Demos into Adobe-Dynamics-Media-Group's software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-Group page 21 and 25). Therefore Adobe-

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Dynamics-Media-Group suggests the claim limitation. Moreover, Demos also teaches spatially and temporally compositing of video frames (Demos column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames (Demos column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group page 21 and 25).

Claims 28-29:

Each of the claims 28-29 encompasses the same scope of invention as that of the claim 2. The claims 28-29 are subject to the same rationale of rejection set forth in the claim 2 (e.g., *Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter*).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213.

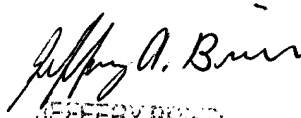
The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw


JEFFERY BRINER
PRIMARY EXAMINER